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THE AREA OF OCULAR COMFORT AS REVEALED BY THE TECHNIQUE OF BLUR POINTS*

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For a number of years it has been increasingly evident to the writer that there is something lacking in the accepted procedure in refraction followed by those ophthalmologists who cling so tenaciously to "drops" and by some optometrists who are still using the methods of ten years ago.

Some, we might say many, progressive optometrists have abundantly proved that the "lens-prism" system is superior to refraction with a cycloplaegic in the great majority of cases and yet there have been cases which did not respond to purely optometric methods and that were successfully solved by the use of "drops." Just why this was so, we are now prepared to answer.

While the dispute as to the merits and demerits of cycloplaegics has raged over a wide front, and for many years, an equally desperate one has been carried on within the ranks of optometrists relative to the merits of static and dynamic skiametry, over the "fogging system," and lately over the use of "base-in" and "base-out" prisms for constant wear or for exercise.

There has been no general agreement, no meeting of minds, and it has been remarked that "no two men's refractive procedure was alike or would result in the same diagnosis or prescription."

The writer has striven desperately to be a good optometrist. To practice faithfully according to the best of his knowledge. But the knowledge held by himself and acquired from others was insufficient. Neither did it appear that other refractionists were as well informed as they should be, else, why the lack of agreement or uniformity in meeting the common problems of everyday practice.

Submitted for publication July 20, 1931.

In casting about for a solution, we reasoned that most of our problems centered around the three major functions concerned in comfortable seeing: namely, refraction, accommodation and convergence. The amount of research relative to all three of these functions has been tremendous. Millions of dollars have been spent on equipment to test or measure their range and powers, individually and collectively.

We can determine accurately the error of refraction of the eyes, we can measure their amplitude of accommodation and gauge to a nicety their phorias and ductions. Granting this—why have we encountered, with greater or lesser frequency, cases which appeared impossible of solution?

The answer lies in this: *that we have failed to perceive the vital relationship between the "refractive" and "motor" mechanism of the eyes.* We have carefully made our refraction and written the prescription. *Then we turned to the extrinsic muscles as to a thing apart.* It was at this point that our most serious error crept in.

It is to solve this fundamental error that we offer our "Technique of Blur Points in Refraction."

The essential difference between the technique we advocate and those in general use hitherto is that we insist that careful attention be paid to the precise moment when vision is affected by the interrelation between accommodation and convergence.

Heretofore, the target used for duction measurements has been a spotlight, an arrow, a cross, or a row of letters. These test objects occupied a visual angle of anything from ten to fifty minutes of angle, comparable to the 20/40 to 20/200 letters on the Snellen chart. With objects of such size, precision was out of the question. A very considerable blur might be present without materially reducing the legibility of the test objects. The new technique demands that ductions be made while the patient views the smallest letters he can possibly distinguish. Tested in this way, the blur point represents *the limit of elasticity between accommodation and convergence.* In other words, we have set up a delicate means of determining the instant when the convergence overpowers accommodation for, immediately it does, vision is affected, the smallest type seen is blurred.

This "elasticity between accommodation and convergence" may be measured in four ways, namely:

(1) Positive Relative Accommodation (minus lenses to blur).
(2) Negative Relative Accommodation (plus lenses to blur).

} Sheard

(3) Postive Relative Convergence (base-out prism to complete blur on smallest type).
(4) Negative Relative Convergence (base-in prism to complete blur on smallest type).
} Jaques

Our method as shown is based upon the employment of prisms, "base-out" to test the positive relative convergence and "base-in" to test the negative relative convergence. We record the amount of prism which blurs out the smallest line of letters (incidentally our test card is a reduction of the standard Snellen letters, the usual 20/20 letters occupying a five minute angle at the near distance of 40 cm. or 16 inches). Next we note the prism which creates diplopia, and finally the amount of prism which the patient can overcome as he re-establishes binocular single vision.

Suppose when we are testing the positive relative convergence that the letters are completely blurred with 12 prism diopters of prism, base-out, that 23 prism diopters causes diplopia, and that single vision is recovered at 20 prism diopters. Record it as 12/23/20. Similarly with the negative relative convergence blur 11, break 21, recovery 18. Write it 11/21/18. In this case the "break points" are 44 prism diopters apart and the "clear area" represented by the 12 of positive and 11 negative is 23 prism diopters in extent. This is our idea of a normal "expected."

The central portion of the clear area is the area of ocular comfort. Under the stimulus of lenses or prisms and *according to an immutable law* this area shifts backward or forward as the case may be, providing the patient possesses and uses accommodation. In other words, this test presupposes accommodation. It is designed to solve those cases, not presbyopic, which have so successfully resisted all hitherto accepted methods of diagnosis. Just so long as there is even a small amount of accommodation remaining, so long is the test invaluable.

Blur points, like facial expression, are never alike in any two individuals. We can meet on this common ground in our consideration of this problem. We are born with very little vision, underdeveloped eyes, and practically no accommodation. The act of convergence and accommodation as a *"twin-function"* is an acquired one. Most children acquire the "Trinity of Vision" during their first year. And here is an important fact: *All learn this act in their own individual way.* By the time they present themselves for examination, they have usually acquired certain habits or brain patterns in the binocular function of "seeing" that are *"very individual."* Hence the failure which has at times attended the employment of routine procedures. We are definitely of the opinion that paralyzing of one of these functions is not a logical procedure.

The solution of the problem lies in learning the precise nature of the relationship between accommodation, convergence and clear vision, and this is revealed by the "Techique of Blur Points in Refraction," as briefly outlined in this article.

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PHOTOGRAPHY APPLIED TO STRABISMIC CONDITIONS*

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Every refractionist who has handled strabismic cases has been confronted with the question of whether or not any improvement is resulting and how much. Sometimes he is quite sure that the deviating eye is much more nearly parallel with the other but the parent of the child being handled is skeptical; sometimes the eyes are brought to a perfect state of parallelism and still the parent will deny it, for various reasons.

Photographic evidence is therefore very useful and it is, of course, particularly valuable should legal action be involved. Its chief merit, however, lies in the satisfaction which it gives to the operator when he finds that his case is progressively improving and when he can finally place side by side "before and after" pictures in which the latter shows the eyes to be perfectly straight.

Having considered this matter of photography for too long a time, I decided to do something definite about it about two years ago. Although I already had three cameras, none of them were satisfactory for the purpose and I finally selected an Ica camera which is very complete and which can produce life-size pictures. It cost one hundred dollars.

The set-up of this camera and other apparatus is shown in Fig. 1. This photograph was taken with a small camera. Fig. 2 was taken with the Ica camera. The stand holding the camera and the head-rest for the consultant consists of a dismantled old Meyrowitz ophthalmometer. This permits practically a universal adjustment, for the camera can be moved up and down, back and forth, and rotated from side to side. A special chin rest was made and that, too, can be adjusted up and down and back and forth.

On the head-rest there is an appliance to take a black card upon which the date of the photograph is inscribed in white ink. Black upon white did not prove satisfactory.

The illumination consists of a 250 watt lamp placed as illustrated in Fig. 1. The time exposure is one second and, while the child will sometimes shift the eyes during this period, usually it remains sufficiently quiet.

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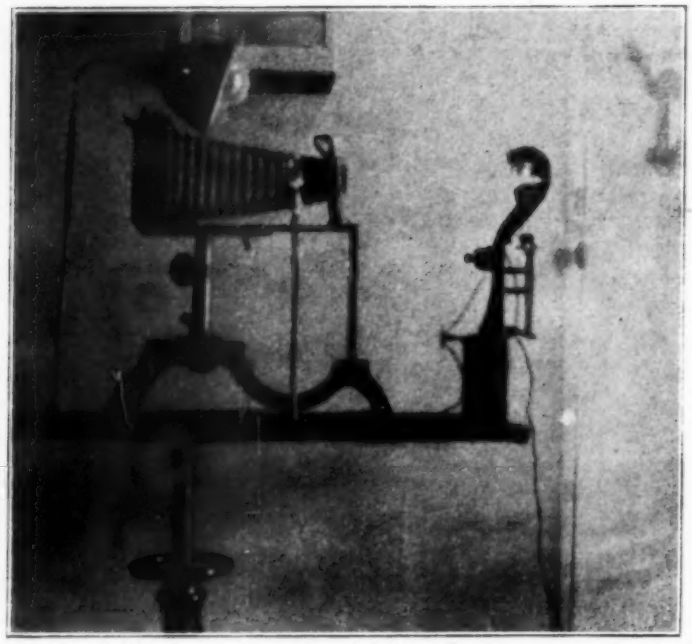
*An abridgement of the material presented to the American Academy of Optometry at Boston, Mass., Dec. 15, 1929.

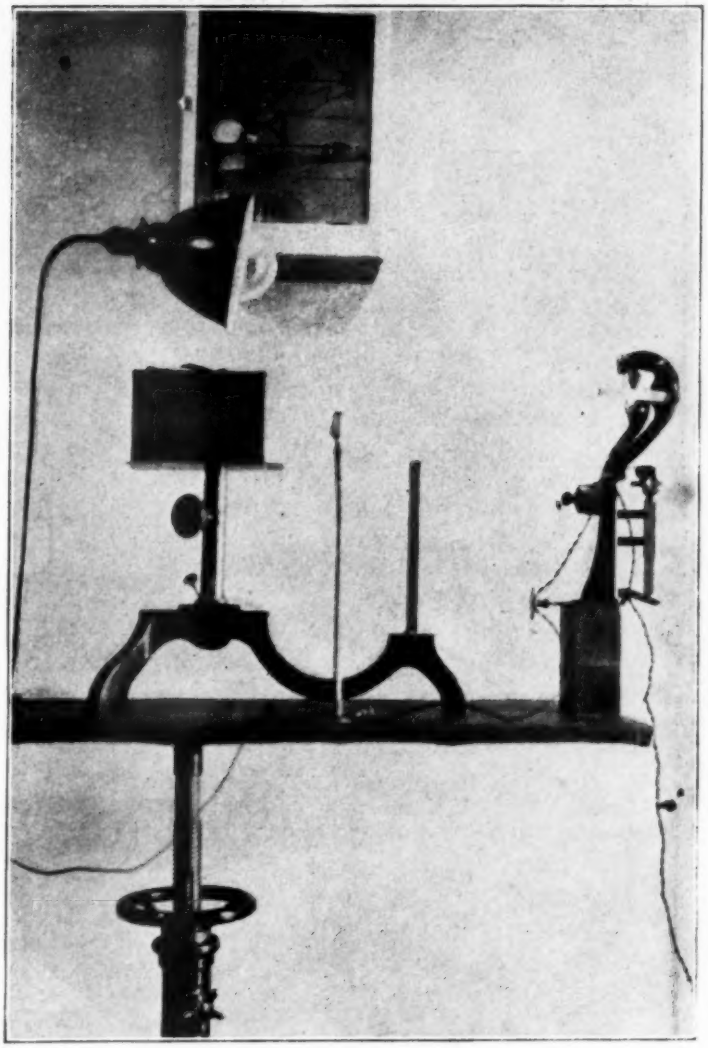


E. G. Wiseman. Figure 1.

When the first photographs were taken the reflection from the cornea of the original source of illumination served as the "control," as illustrated in Fig. 3, but it was decided that these spots were too large and therefore we introduced into the apparatus the small lamp upon a standard as shown in Fig. 2 and which gives the very small cornea reflex as illustrated in Fig. 6. With such a small control it is possible to note very slight changes in the visual axes by observing the relation of the reflex to the edge of the iris.

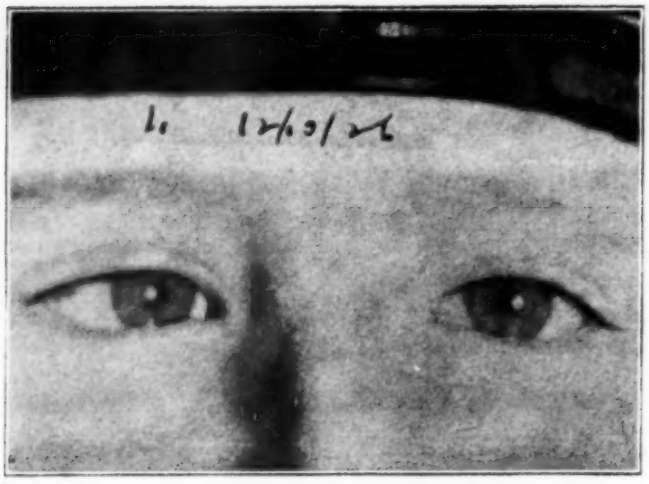
When taking the photograph the fixing eye is directed to a point on the same plane as the lens of the camera. It happens to be a shining screw head. Since the angle formed by the screw head and the eye and the small control light is comparatively small, it follows that the pictured reflection of the latter is approximately at the center of the pupil (assuming the right eye to be the fixing eye), while the reflection from the cornea of the left eye is found, in a case of internal strabismus, toward the outer edge of the pupil. As the eye is straightened the reflection on the left cornea approaches the center of the pupil.

While the centering of the two cornea images at approximately the center of each cornea demonstrates that the two eyes are converging more or less orthophoricly for the point at which they are

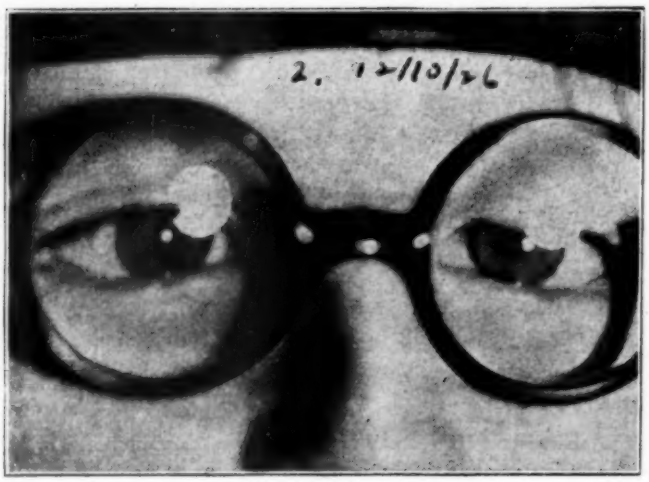


E. G. Wiseman. Figure 2.

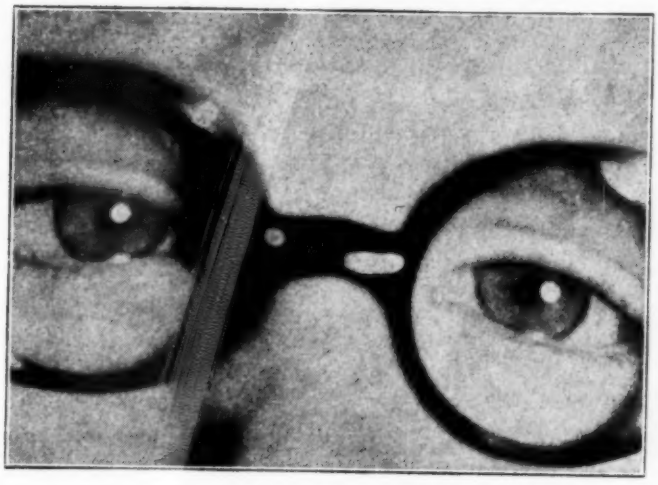
fixing—about 316 mm., this does not necessarily mean that they are parallel for distance vision. It very frequently happens that eyes which have been strabismic can fix a common point near at hand but cannot relax further when looking at a more distant point. Thus they are still strabismic.



E. G. Wiseman. Figure 3.
Case started before small control was installed.

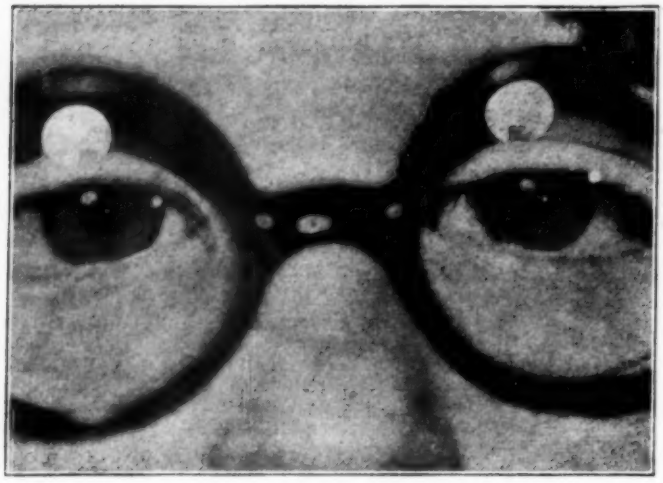


E. G. Wiseman. Figure 4.

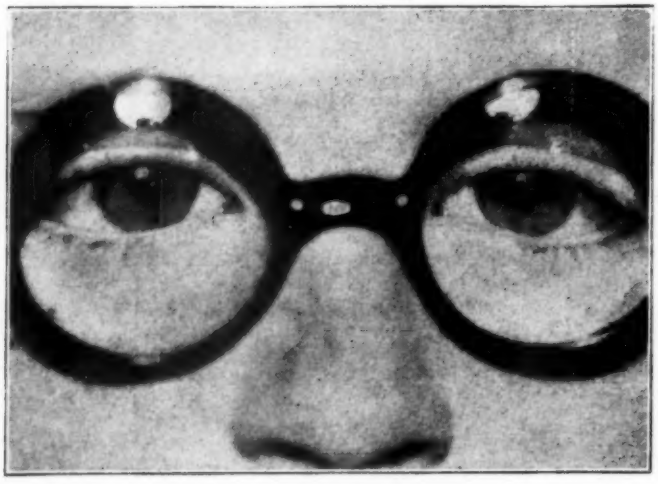


E. G. Wiseman. Figure 5.

E. G. Wiseman. Figure 6.



E. G. Wiseman. Figure 7.



E. G. Wiseman. Figure 8.

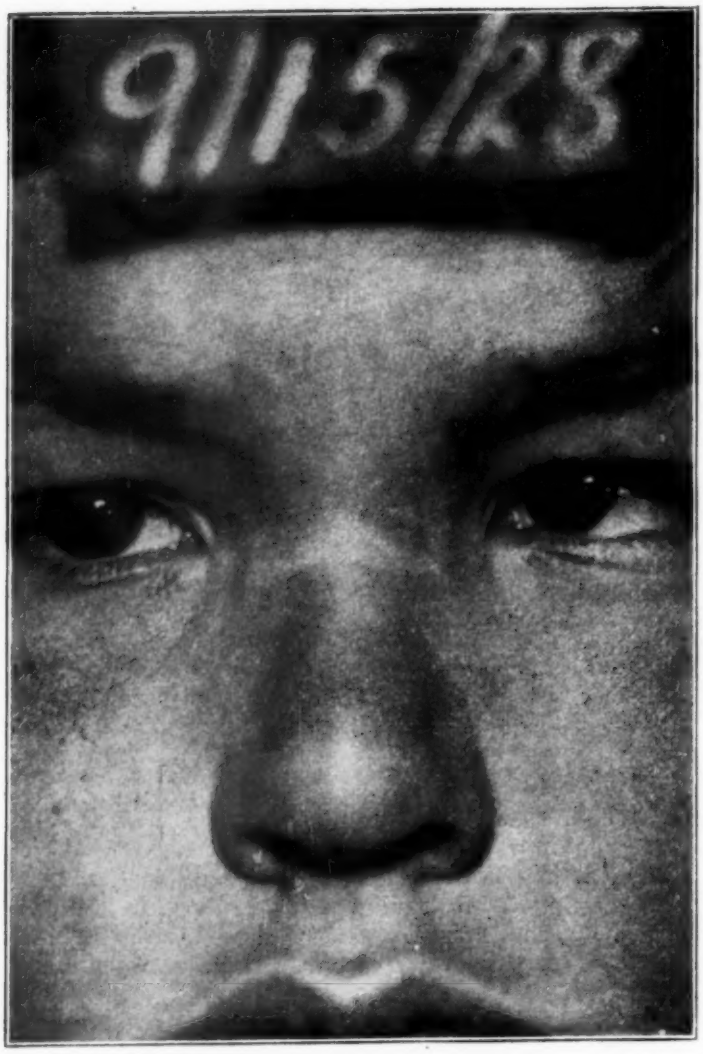
E. G. Wiseman. **Figure 9.**

It then shows that in order to get evidence relative to the status of the eyes when looking at a distance, a control similar to the small light but much larger must be placed at a distance of fifteen or twenty feet and the eyes fixed upon that point and photographed in that position. If the points of reflection are then at approximately the center of the pupil or in correct relationship to the edge of the pupil, practical parallelism is present.

Figures 3 to 9, inclusive, illustrate the radical change which has taken place in this boy's eyes. In Fig. 3 it will be observed that the control is toward the outer edge of each pupil. In Fig. 4 which was taken ten minutes later it will be noted that one control has remained on the edge of the pupil while the other has moved toward the center, thus indicating that the eye has already turned a little outward. In Fig. 9 one small control light is just inside the edge of the pupil and the other is between the edge and the center. No further photographs could be taken of this case because the child could no longer be brought in.

Figures 10 to 16, inclusive, show a marked change in a boy 13 years old who had been handled by a number of men for nine years without any success. The strabismus was alternating. An interesting feature of this case is illustrated by Figs. 13 and 14. In the former the right eye fixed, while in the latter the left eye fixed. It will be noted that the strabismus is much less when the left eye fixes.

This has been a stubborn case and is not yet completed. The cerebral interpretation of spatial points was so distorted as to be actually reversed. Thus, when tested for position while the one eye

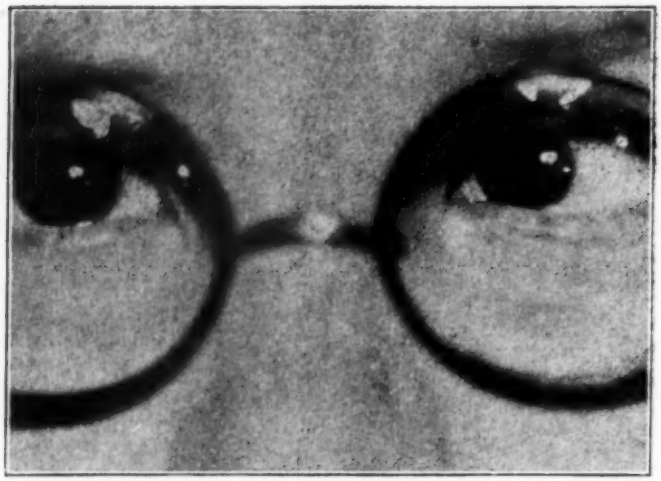


E. G. Wiseman. Figure 10.

Condition of eyes on the first day observed, without correction.
Note: This plate has been made full size of photograph to show head-band with date attached.

E. G. Wiseman. Figure 11.
Condition of eyes on first day observed with correction.

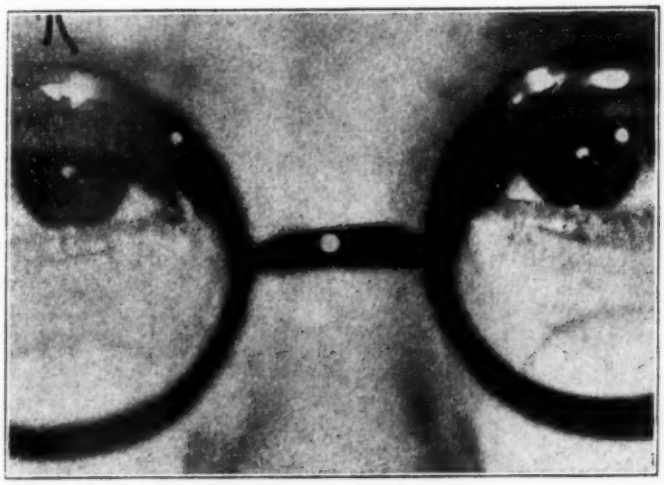
E. G. Wiseman. Figure 12.
Condition of eyes two days later with new bifocal correction.



E. G. Wiseman. Figure 13.
Condition of eyes two months later, fixing spot on same plane with camera lens and control light with *right* eye. Patient using 4Δ base-out prism at near.

E. G. Wiseman. Figure 14.
Two months later still. The fixing spot on same plane with camera lens and control light with *left* eye.
Observe that strabismus is less.

E. G. Wiseman. Figure 15.
Patient now fixes continuously with left eye. No prisms in correction. Photograph taken in July, 1929.



E. G. Wiseman. Figure 16.
Observe that the control light of right eye is now nearer nasal edge of pupil. Amplitude of stereoscopic vision is now 6° to 7°. Started with 1°.
Photograph taken Dec. 12, 1929.

was turned in about 32 prism diopters and thus should interpret as coming from the extreme right the light which was used for the purpose, the brain recognized it as coming from the left. It took quite a few treatments before the occipital visuo-psychic area correctly interpreted the position of the images.

At the time the fusional amplitude was only one prism diopter. This increased as the strabismus was reduced. It is now 10 to 11 P. D.

A great deal remains to be done before the technique involved in this photographic work is perfected. So far we have done only that which was necessary to procure reasonable accurate records.

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MENTAL PROCESSES WORTHY OF SCIENCE AND OF OPTOMETRY*

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"Knowledge is credence based on sufficient evidence, and superstition is credence without sufficient evidence." No truth can be more satisfactorily established by history, than that man is gradually emerging from superstition—gradually emancipating himself from those unfounded credences which have, in every department of science, enslaved his intellect and misdirected his actions.

"It is too much the practice, however, of this age, to indulge in self-adulation, and to imagine fondly, that the light which has begun to dawn has dispelled all the darkness from the atmosphere of knowledge."

"Men seem to think that, because they can now look rationally at the phenomena of nature, they have read the whole riddle of the universe; that they are wise men; that superstition no longer enfolds them; and that, from their high mountain of wisdom, they can look back on their credulous fathers, and smile complacently in the vastness of their own superiority."

"Superstition has retired just as the sciences have been reduced to ordination—just as they have emerged from the chaos, and been moulded into form by the intellect of man. In the very same order, and to the very same extent, and at the same chronological period that the sciences have appeared, has superstition gradually retired, and taken her new stand in those fields of thought where the reason of mankind has not yet beheld the divine light of truth."

"In matters of philosophy and science, authority has ever been the great opponent of truth" (W. E. Jevons).

"First recognize what is true; we shall then discern what is false; and properly never till then" (Thos. Carlyle).

Swedenborg, one of the world's greatest thinkers and investigators tells us, "There is a difference between *scientific, rational,* and *intellectual* truth, and, they succeed each other in an orderly arrangement. Scientific truth is a matter of science; rational truth is scientific truth confirmed by reason, and intellectual truth is joined with an internal perception that it is so."

Science[1] is defined as knowledge gained and verified by exact

*An abridgment of material presented before the American Academy of Optometry at Boston, Mass., Dec. 17, 1929.

observation and correct thinking. It exists in the mind and in the mind only. It originates when we apply a rational method to the object of intellectual perception, rejecting all human superstition and all human authority.

The sciences are all direct and spontaneous, and necessarily evolving, and each new science grows out of, and is produced by those preceding. Logic is the universal form of science; it is science with blank categories, and when these blanks are filled in with numbers, quantities and spaces, in the mathematical science, and with qualities and powers of matter in the physical sciences, mathematics and physics take their scientific origin and assume an ordination which is not arbitrary.

Logic, mathematics, physics, chemistry, organic science, and man science is the order of discovery. Human progress is from logic and the mathematical science, through the physical sciences and up to man science; and human physiology is the highest and the most complex; it is the ultimatum of material manifestation; the final type of complex arrangement, the summit beyond which we leave the material world and enter into a new region of thought.

"Every science which precedes human physiology is necessary to the complete understanding of the human frame, and if we wish to know the inherent position or station of any science in the world of science, we have only to ask how many substantive concepts does it necessarily involve.

Optometry involves psychology, physiology, anatomy, pathology, toxicology, physics, chemistry, mathematics and logic, and thus optometry if properly practiced is exceedingly complex.

"Let us observe that the natural history of a science always begins at the wrong end. We do not mean that it ought not to do so, for it cannot do otherwise. Anatomy could not being with fibrin, erytrocyte and phagocyte; neither could zoology begin with organic substance, and necessarily optometry began with the elementary."

"It is evident that it is impossible by the help of experience alone, and apart from the sciences, to reach that elevation where truth can be found and causes comprehended. It is the province of the rational mind to form one compound idea out of many ideas, and of many such compounds again to form another idea and to advance in this manner to greater knowledge and greater powers."

It must be remembered that throughout the whole range of life there are always two elements involved. The static and the dynamic. The one relatively permanent and resisting, and the other relatively active and changing. The static is the habitation, and the dynamic is the inhabitant. The body the habitation, and man the inhabitant.

*Dove. Theory of Human Progress.

"Man is endowed with two faculties which constitute his life; the one is called the will, and the other understanding. They are distinct from each other, yet so ordered by creation as to become a one, and when so united they are called the mind."

"The human mind then consists of these two faculties, and the whole life of man is there in its principles. As all things in the universe which are according to order bear relation to good and truth, so all things in a man have relation to the will and the understanding; for good with him belongs to the will, and truth with him to the understanding."

Optometry makes its contribution to the understanding through the eye as a medium. "The eye does not see of itself, but by which is continuous with the understanding. Neither does the ear hear of itself, but by which is continuous with the understanding, and the tongue speaks from the thought of the understanding. The nature of a member or organ is known from its use, and its use determines what the organ is in itself."

Dr. J. J. Garth Wilkinson, in his book, "The Human Body and Its Connection With Man," says, "The human body as an object of science, has hitherto been the property of one profession, and it has been studied mainly after death when it is the reverse of human. A different study is needed to connect it with life, health and business; a study that brings the plain to illustrate the obscure, and the common to interpret the extraordinary."

In support of our conclusion that innervational training is the correct and scientific method in handling squint, I offer the following:

"From the connections of the medulla oblongata and the spinal cord with the cerebrum, it follows that the former may act from themselves without consulting the cerebrum, when the latter loosens and relaxes its fibers; and these fibers are loosened when one and the same action has frequently passed the same way. In this case the corpora striata and the optic thalami can initiate motions which at first originated with the cerebrum and were voluntary, for it is a well known fact that voluntary acts by daily habit become spontaneous, or that habit is like second nature.

"Experience declares that the feet with all their articulations, and muscles, are taught at last to walk as of themselves, and the arms learn how to fold and throw themselves about in agreement with each gesture of the body, and every least muscle of the body knows how to accommodate itself to the ideas of the mind in oratorical effect and gesture" (Swedenborg, 1739).

In 1879 an article in "The Nineteenth Century Magazine," written by Dr. Althus, reads as follows: "The central ganglia, which constitutes the fourth great division of the brain, have the function to render certain complex movements which are intimately connected

with sensation, and which are in the first instance only excited by volition and consciousness, gradually as it were, mechanical and automatic. The object of this contrivance is to save time and trouble to the higher portions of the brain. It is intended that these latter should only be occupied with the most important manifestations of life.

"The central ganglia may therefore, said to be the confidential servants or private secretaries of the hemispheres, and undertake a good deal of drudgery in order to leave the gray surface at liberty for the more difficult kinds of work which falls to our lot in life."

According to Williams James: "The acquisition of knowledge and all kinds of behavior, however complex, is dependent on the original equipment and the development and modification of it. From the physiologic standpoint we are born with a certain native aptitude to use certain nerve paths. In other words, impulses pass over certain synapses more readily than others.

"Habit is a pathway of discharge formed in the brain by which certain impulses ever after tend to escape. This is due to the plasticity of nervous tissue and the readiness with which impulses can overcome resistance offered at synapses, thus forming new connections and blazing new pathways.

"Many acts which at first require conscious effort, may by repetition become practically automatic. This is in the interest of simplifying our movements, mental as well as physical, thus making them accurate and diminishing fatigue."

Charles Ward, 9 years of age, was brought into the office of Dr. Walter F. Kimball, of St. Joseph, Mo., on September 10, 1928.

Dr. Kimball's record and report of the case is as follows: Left, eso-hypophoria sufficient to conceal most of the iris, nystagmus; extremely nervous; practically a blank, mentally; knowing but little more than the position of his mouth and how to move his limbs. Had attended school three years and had demonstrated no mental capacity.

Medical specialists had failed to make any headway with the case and had advised an operation. Osteopathic and chiropractic treatment had been tried without benefit and the mother had come to the conclusion that the case was hopeless.

On October 13th, as the result of about five weeks of innervational training, which consisted of the rapid moving of a target, horizontally, and in conjunction with an interrupter, the eyes checked orthophoric. In January the nystagmus ceased. The refraction was plus 2 O. U. Dr. Kimball in his letter to me said, "Well do I remember the boy's mother sitting in my office that day with tears rolling down her cheeks, and saying, 'Dr. Kimball, this is the first time I have had any hope for my boy.'"

Dr. Kimball had the boy report for inspection before answering

my request for the history. He states, "I saw the case last week; this would be the last week in October, and the boy is orthophoric either with or without his glasses. Physically he has changed from an anemic child to a robust, husky youngster, and his mother reports that he is making wonderful progress with his studies."

And this to fill us with regard for man,
With apprehension of his passing worth,
Desire to work his proper nature out,
And ascertain his rank and final place;
For these things tend still upward, progress is
The law of life; man is not man as yet.

Williams James' statement regarding the plasticity of the nervous system, and varying degrees of synaptic resistance are important to optometry; one gives the reason or basis for innervational training, and the other (synaptic resistance) suggests a cause for convergent squint in low or small refractive errors; or in an extreme situation, as the result of but accommodating for a reading distance.

Resistance in the ciliary nerve pathway, and none in the pathway to the converging muscles, would produce a relatively high accommodative convergence. Let us visualize a 25% efficient accommodative pathway, associated with a 100% efficient pathway to the internal recti, and figure out the accommodative convergence on a three to one ratio.

We are told that changes in the color fields associated with characteristic ductions indicate toxemias of various types. Dr. Arbuthnot Lane, surgeon of Guy's Hospital, London, gives the following as symptoms of intestinal toxemia: "Browning of the eyelids, also of the skin about the eyes, pigmentation of the skin, wrinkles, roughness and dryness of the skin, cyanosis, coldness of the hands and feet, livid skin, wasting of the muscles, general weakness, weakness of the heart, dilated heart, melancholia, headache, symptoms resembling brain tumor, epilepsy, goiter, adenoids, enlarged tonsils, pyorrhea, various eye diseases and baldness."

Dr. H. G. Adams, specialist diseases of the skin, Bartholomews Hospital, states as follows: "There are skin eruptions which are certainly definite entities, and almost obviously due to some specific cause, the nature of which, however, we are as yet ignorant. There are circumstances which render it very improbable that these eruptions are due to the presence of micro-organisms, and the only alternative seems to be to regard them as due to toxins, the most likely source of which seems to be the alimentary canal."

Dr. Ernest Clark says: "Although not generally recognized, the eye as a matter of fact, is an organ that registers in a very delicate manner certain conditions of the system, and among them intestinal toxemia is the marked one. The difference of accommodative power

in individuals of the same age indicates the difference in their toxic condition. Hardening of the lens is a very constant sequela of intestinal stasis."

I am informed that Brombach diagnosed lead poisoning, from a color field. He had some difficulty in discovering the source, but it was found to be white lead in the face cream being used. The recovery which followed the discontinuance of lead containing cream confirmed the diagnosis.

Vision is said to have a hazard in certain foods and drugs. Dr. Casey Wood of New York, records a case of temporary amblyopia from chocolate, appearing in the form of a migrain associated with scintillating scotoma. He further suggests that minor defects of vision manifesting themselves in the form of asthenopia, probably, not infrequently, are caused by drugs and beverages in every-day use.

Under the heading Ambloypia, in system of diseases of the eye, Norris and Oliver, there are 59 drugs and substances listed as having caused this disorder. Among them we find chocolate, coffee, tea, essence of peppermint, Jamaica ginger, belladonna, cinchona, eserine, iodide of potassium, pilocarpine, nitrate of silver and ptomaine poisoning.

In the list you will observe some articles which are, in the opinion of the vast majority, positively harmless, yet those addicted to excessive coffee drinking in countries where this beverage is consumed in enormous quantities—in Arabia, for instance—are said to become blind not infrequently from a form of optic nerve-atrophy perhaps analogous to that caused by alcohol.

Dr. E. K. Campbell reports a case of amblyopia with partial central scotoma for red, attributed to drinking large quantities of strong tea, which recovered after the beverage was stopped.

Another writer lists not only quinine, the salicylates, iodides, bromides, and alcohol, but tea, coffee, chocolate, high game and strong cheese, believing that the asthenopic symptoms are occasioned by some form of dyspesia which these substances originate; in fact, a form of ptomaine poisoning.

On quinine as a cause of visual difficulties, Dr. DeSchweinitz reports as follows: "The earliest records of visual disturbances caused by quinine are by Berandi, 1829. The first to be examined ophthalmoscopically were by Von Graefe, 1857. The earliest carefully recorded examples began in 1879, until now the literature comprises fully one hundred cases coming from almost all portions of civilized world.

"That the drug itself and not a concomitant disease is the cause of the amaurosis is established by cases in which it was taken by mistake by healthy individuals; by experiments on animals, and also on human beings. The dose which may cause blindness varies

from 15 grains to 1 ounce in 24 hours; cases occurring under the influence of comparatively small doses probably being due to idiosyncrasy.

"In mild cases there may be temporary amblyopia without fundus lesions and diminished accommodation. In severe cases the following symptoms may be present: Blindness complete or incomplete, usually develops with great suddenness and more absolute than in any other recoverable condition."

Of his own experience DeSchweinitz says: "In the earlier stages of blindness (from the first to the fourth week), pallor of the disks and great contraction of the vessels. The microscope reveals in the optic nerve imperfect differentiation of its fibrous trabeculae and the spreading apart of the individual nerve fibrils. Three months after the onset of the blindness (ophthalmoscopically white disks and practically complete obliteration of vessels) and in some cases the atrophy extends throughout the nerve, chiasm and tracts."

Others report on quinine as follows: "Dilatation of the pupils, absence of the light reflexes, imperfect response to accommodative effort, nystagmus, protopsis, occasionally divergent strabismus, increased ocular tension, anaesthesia of the cornea and conjunctiva, occasionally retinal haze and a cherry-colored spot in the macula resembling embolism of the central artery of the retina. Often permanent diminution of the light and color-sense, and contraction of the visual fields, the contraction usually assuming an elliptical shape, night blindness from optic nerve-atrophy."

Knapp states that salicylic acid may create visual disturbances precisely analogous to those seen in quinine blindness, and DeSchweinitz confirms this conclusion.

Aspirin is acetyl salicylic acid; as a drug it is comparatively new and but little is known of its toxic possibilities, its popularity with self prescribers is everywhere in evidence, but its relationship suggests caution.

KI is freely prescribed for many of the ills that flesh is heir to; the prescription is refilled without benefit of the physician, yet, when too long administered it causes great emaciation and depression of the vital powers. According to Boericke it produces a sad and anxious state of mind and harsh temper, violent headache, particularly through the sides of the head and over the eyes, redness and swelling of the nose, an injected conjunctiva, noises and pain in the ears, throbbing painful burning in the stomach, enlarged glands, purple spots on the skin, etc.

"Every art assumes that it has its own appropriate method; every artisan prides himself upon his own correct technic. But both artist and artisan may deceive themselves. A finally correct or appropriate method, or technic of any art, or science, or task, is a

blind alley. There can be no 'ultimately correct' technics, except thinking; and thinking can be called that, because it criticises all technics, itself included. No artist or artisan can be sure of his technic, save as he permits it to be subjected to criticism."

George Dutton, A. B., M. D., in his book "Etiopathy" states, "A medicine according to its derivation, is something that heals or cures, or at least something that is given for that purpose. If it fails to heal or cure, but kills or injuries instead, then does it not fail to be medicine? Does the ignorance of a practitioner ever change the character of a drug?"

In "Our Medicine Men," by DeKruif, I find the following: "It is gratifying to relate that the possibility of an entirely new attitude in the study of disease is beginning to appear in America as well as in Europe. It will be difficult to convince the majority of medical investigators that it is futile to continue their researches without fundamental knowledge of the exact sciences.

"At present there are too many of these persons who learn by rote the delicate methods evolved by chemists, use them with confidence and abandon, and draw idiotic and unjustifiable conclusions from their employment. It is necessary to attract chemists to the study of biology and the problems of disease. This will be difficult, since such men are rapidly befogged by the bewildering mass of fact and the still formidable vestigia of medieval medical jargon that it is necessary for them to master. Accustomed to be accurate to the third and fourth decimal place, they naturally shy at experimental errors of 5%. It follows that any rapprochement between genuine scientists, such as physical chemists, and embryo investigators of the type of the majority of students of disease, must be in the nature of a free collaboration.

"The chemist must have a real interest in biological problems. These are actually rather simple in statement, when the fog of superfluous data and idiotic speculation is removed. Until medical educators realize that the prospective students of disease must have a really thorough training in chemistry and physics, and until they are able to teach their subjects from this point of view, it will be futile for medical graduates to attempt unaided investigations of this type. Inadequately trained, they tend to apply the sloppy methods of biological and medical research to the exact science of chemistry, rather than to introduce chemical methods into biology."

The next contribution is from "Inside Experience" by Hart: "So the scientist finds his starting point in the practical problems of the artisan, using and extending the methods of common life and work. And in the final stage of a scientific mood, the true scientist tends to become an artist, transforming the new world of his explorations into a realm of contemplative satisfaction and integrity. The

true scientist has no quarrel with either artisan or artist. Nor need they quarrel with him so long as he knows his business. The domain of the artist overlaps the last stage of the mood of the scientist. So art is the completion of science, as science is the extension of artisanship. And all three—artisan, scientist, and artist—are involved in those creative processes by means of which experiences grow, and experience enriches itself, critcises itself, renews itself, and more or less continuously elaborates itself for the continuous exploration of nature, the conquest of the conditions of the living, and the development of a livable world in which utility and beauty may dwell side by side."

In the report of the committee on optics and visual physiology, section on ophthalmology, presented at Portland, Oregon, last July, and published in the Journal, A. M. A., issue of November 9th, there are many statements consistent with the attitude of medicine throughout its history.

Their treatment of Harvey and Pasteur are examples. Eddleston says no physician over 40 years of age accepted Harvey's new physiology, and 50 years after his discovery the medical faculty of Paris solemnly petitioned the King to prohibit the teaching of the circulation of the blood, on the basis that such a doctrine was contrary to the authority of Aristotle.

DeKruif, "Our Medicine Men," states that Pasteur's struggles to convince medical men that his researches revolutionized their conception of disease is most instructive and illuminating. His ideas met with violent opposition or complete indifference by all but a few physicians.

"These gentlemen opposed him, mind you, not on the ground of the fallacy of his notions, but because he was a mere chemist and not a doctor, and as a result could know nothing of disease."

Quoting further from the same author, "At the present moment much more is heard of the term 'Medical Science' than of the 'Practice of Medicine.' And it is a short step from the phrase, 'Medical Science' to that of the 'Science of Medicine.' Now it is clear that the latter designation places medicine on a footing of equality to the well established sciences of physics and chemistry.

"This constantly awakens the amusement or ire of the physicists and chemists. It is true that the emptiness of such a pretense would be laughable did it not lead to such great intellectual confusion. But since clarity and honesty of intellectual concepts are among the few things of which mankind may be proud, it is necessary to remove fallacious ideas of this nature, and it is wrong and essentially decadent tendency to stand aside with a smile of superiority, or to shrug one's shoulders with resigned cynicism.

"One prominent member of that profession asserted that 'The

history of medicine is the history of mankind.' Even a casual knowledge of history, lay and medical, would convince anyone of the fundamental absurdity of such a statement. Another leader boldly asserts that medicine must even now be considered, not as applied, but as an independent science. In fact, his remarks in general would lead one to believe that physicists and chemists are to be degraded to the ranks of hand-maids to obey the commands of that super-scientist, the modern doctor.

"Experience is not to be controlled by dogmatism any more than the world is going to be dominated by arbitrary boundries. Experience is not to be regarded as dangerous or immoral; experience is to be more completely explored for its meanings, its riches, its beauties, its vistas and its intermations of further experinces. An experience is to be realized both by the practical activities of living and by the theoretical activities of thinking—ever outward bound; and, in the long run, these two are one."

Under the heading "Ideal Scientists" in Henry Fairfield Osborn's book, "Creative Education," we read, "Men of science are no better or no worst than other men. The quest of truth is often a beautiful cloak thrown over the shoulders of the real motive, which is personal ambition or the quest of fame; the real cleavage is not between the scientist and the merchant; the sheep and the goats are not separated by any such classifications, but the sheep include those scientists and merchants who are animated by humanitarianism, while the goats include those scientists and merchants who are animated by purely selfish motives of egosim."

To this I now wish to add that the chief obstacles to scientific progress today, not only in medicine, but in all branches are obstacles in the lack of proper sentiment toward other men in the proper animating spirit, and that the ideal pursuit of knowledge is when its main object is not ambition, not fame, but the pure search for the truths of nature in order that they may be revealed to man for his intellectual, moral, and physical welfare.

Knowledge is not a couch whereon to rest a searching and restless spirit, or a terrace for a wandering and variable mind to walk up and down with a fair prospect, or a tower of state for a proud mind to raise itself upon, or a fort or commanding ground for strife and contention, or a shop for profit or sale, but a rich storehouse for the glory of the Creator and for the relief of man's estate.

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JUVENILE EXOPHORIA*

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In recent years the writer has been observing a condition existing in school children between the ages of six and fifteen. This condition he desires to term "juvenile exophoria," for the reason that it is found only in youngsters during the above ages. The symptoms are as follows: headaches, frontal and occiptal. Vision is usually normal or 20/20 in each eye with occasional dizziness.

The refractive error is usually from .50 sphere to 1.50 sphere. Sometimes no refractive error is found at all, but always there is an exophoria ranging from six to twenty degrees. Two of our foremost teachers differ a bit on this condition; however, in their writings each of them give us a glimpse of the same condition. Dr. Peckham would probably term this condition "undeveloped accommodative-convergence." Dr. Skeffington would probably mention "weak convergence, due to accommodative fatigue." These splendid men would agree except in phraseology which seems to be one of the greatest barriers to optometric harmony and understanding.

This condition was very forcibly brought to the attention of the writer when he examined the eyes of his own daughter, age 7, a couple of years ago, and found that she had fourteen degrees of exophoria at distance and eighteen degrees of exophoria at near, which at times relaxed into a complete exotropia. This case started us to working and experimenting. Going back over our records, we found a number of cases of this kind and in every instance where the symptoms met the above qualifications, the remedy or correction was the same. In almost every case we attempted stimulation of convergence by exercise, but with only partial success; this, as we later decided, was because we were treating the effect and not the cause.

After many months of experimentation and research on many cases, we found that the best possible results were obtained by the application of the simple hyperopic correction or plus lenses. The accommodative-convergence relationship being a dual or triple function involving, as it does, the voluntary and involuntary, as well as the sympathetic nervous system, and since this relationship or the syncritic faculty does not begin development until about the sixth month of age, and is completed at about the sixth year. The develop-

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ment being a training of the brain, or will, to co-ordinate the activity of all these functions, and delegate as much of the work as possible to the sympathetic nervous system. Accommodation seems to be an involuntary function, while convergence is a voluntary function. The sympathetic system co-ordinates these two functions into the act of accommodative-convergence relationship. This led us to the following conclusion—that the premature strain on accommodation brought about an exhausted condition of convergence. In other words, the tremendous strain placed upon accommodation at an age before the perfect development of the accommodative-convergence relationship was established, seemed to have brought about the development of an unharmonious condition where in the accommodation suffered first, but the result was manifested in the convergence weakness.

Proof of the correction of this diagnosis lies in the fact that in almost every instance the relief and a tremendous reduction in the exophoria or exotropia was brought about by the simple ametropic correction, or plus lenses.

DR. W. S. FARMER,
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VISUAL ACUITY IMPROVED BY CHANGING DIET*

M. Steinfeld, Opt. D.
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Once in every two or three years, an unusual type of case has presented itself in children between the ages of ten and thirteen. Vision was very low, usually about 20/100 or 20/200 except the last one in which it was only 8/200. In no instance was there any error of refraction of importance, none more than a half diopter cylinder. Ophthalmoscopic examination showed nothing to account for the low vision, and physical examinations revealed nothing to substantiate the belief that some infection was causing the trouble.

Acting on the belief that the low vision could only come from an accumulation of toxins in the eye tissues, duction exercises were given in each case for the purpose of stimulating the circulation of blood to absorb these toxins. A daily treatment was given, and after about ten days vision would begin to improve, and within a few days come up to normal. In every instance the result was satisfactory.

With one or two exceptions all these children were from very poor families, most being brought by the health nurses. When the last was brought in showing a vision of only 8/200, careful inquiry was made into his diet. It revealed that he lived on a very restricted diet of which dried beans was a large item. He was placed on a diet including vegetables, fruit and milk. His vision improved to 20/100 in two weeks. He then did not return for six weeks when it had improved to normal. The treatment and result in this last case would indicate that lack of proper nourishment or more probably the lack of the necessary vitamins in his diet, was the cause of his low vision. I am now convinced that the cause was the same in all the cases, although results were secured by different means. There is no doubt that none of these children were receiving the proper diet.

We have an interesting field opened to us in the study of the part diet and the vitamins play in the vision of children.

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Submitted for publication June 12, 1931.

A LOOSE LEAF CASE RECORD SYSTEM*

Robert J. Pearce, O. D.
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It is hard to find any two optometrists who agree on a case record card. Therefore it is hard to find a printed card that is entirely satisfactory. Some optometrists have their own cards printed, which is rather expensive, and not permanently satisfactory, as we all change our methods of procedure occasionally.

The writer has used several different printed record cards in his eight years of practice and has not been entirely satisfied with any of them. Recently he devised a loose leaf system that fills the bill better than anything he has used previously, which is as follows:

A control sheet was made up on ordinary ruled note book paper, eight by ten and a half inches. This was made up with the holes on the right side of the sheet so that when the loose leaf book is opened the control sheet is the left page and the blank page on which the data is to be taken down is the right page.

The data is written down on the blank page just opposite the place on the control page that calls for it. For instance, NAME is written on the first line of the control sheet and the patient's name is written on the first line of the data sheet. Five lines are used for the name, address, age, occupation, old Rx., history, visual acuity, external eye examination and interpupillary distance.

Beginning on the sixth line Dr. Skeffington's "eighteen point" routine is written on the control page. That makes: 1. Ophthalmoscopy on the sixth line. 2. Keratometry on the seventh line, and so on down the eighteen steps of Dr. Skeffington's routine. In the lower right hand part of the sheet is written mounting data, charges, etc.

When the examination is completed the data sheet is removed from opposite the control sheet and inserted in its proper alphabetic place.

One of the main advantages of this system is that there is ample space to write down all important data. Printed record cards are usually too crowded. To prevent the loose leaf holes from tearing out you can get small linen rings at any book store to paste around the holes.

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THE CAUSATION OF MYOPIA

In the May, 1931, issue of the American Journal of Optometry there appeared an editorial on The Causation of Myopia. The writer would like to tell what he has found concerning the "causes" and treatment of myopia.

A few years back, Dr. Eugene Wiseman attempted to explain one cause of myopia from the fact that our eyes in attempting to assume positions in the anterior plane of the head became myopic by the tension of the interni in attempting to obtain or maintain convergence. If such is the case, then why are we not all myopic? Why are there thousands upon thousands of cases where the interpupillary distances are very wide, and yet there is no myopia present?

Then Dr. Peckham came along and advanced theories whereby myopia may either be prevented or checked. Unfortunately, Dr. Peckham based his claims only on theory. The writer has found that ALL of Dr. Peckham's explanations as to the cause and treatment of myopia are wrong. The writer has yet to see ONE case where myopia was prevented, checked or reduced. If anyone claims that he checked the progress of a steadily increasing myopia, then in my belief the myopia had stopped progressing of its own account.

I have seen a large number of cases of myopia among salesmen who did barely one hour of reading a day, and where the myopia came

on in their teens or early twenties. The writer has treated many cases of myopia combined with esophoria and has seen many similar cases that were treated by others for months resulting in only one thing—misery and blurred vision for the patient.

In a few months the writer shall present a treatise on a new interpretation of phorias. I have been working on this for about one year. I may say here that the present understanding of phorias is very obscure.

The most common cause, if it can be considered a cause of myopia is, in my judgment, heredity. In my experience, I doubt if I have seen more than one case in five thousand where the case history indicated an acquired myopia. And at that who knows but what acquired myopia may be found only in people having a predisposition to myopia. About two or three cases of myopia have been seen where neither heredity nor acquisition played a part.

Furthermore, quite a few thousand cases have been seen where patients had been studying for years and yet there was not a trace of myopia. Most of these cases showed hyperopia or astigmia, or both.

The writer is of the opinion that the cause of the myopia, most often, and perhaps always, rests in the anomalies of metabolism, peculiar to certain types of individuals.

It is indeed very difficult to correlate hypertension of the eye with mypoia. I have seen but one case of glaucoma combined with myopia. Dr. Chas. H. May in his book "Diseases of the Eye" claims that myopes are exempt from glaucoma. He evidently did not see any cases of myopia combined with glaucoma. It seems, therefore, that hypertension of the eye is not a cause of myopia.

If hypertension exists in the eyeball, loss of vision will result from two causes:

1. Pressure against the rod and cones.

2. Pressure against the vascular supply of the eyeball. We would therefore have glaucoma.

Professor George Levinsohn claims that hygienic conditions and faulty posture cause myopia by reason of venous engorgement. What about those numberless cases where persons live under the above conditions and yet there is every form of ametropia but myopia? Professor Levinsohn's evidence taken from apes does not necessarily apply to humans. Apes may have some unexplained condition that causes myopia while humans are thought to be a higher evolutionary step from that of apes. No one has any right to assume that conditions seen in one species should apply to a non-similar species. Metabolism in monkeys must not necessarily be the same as in humans. The structure and function of the cell plasma of humans and monkeys does vary considerably. The endocrine function in monkeys and man does vary to a marked extent. For example, the strength of a man

and monkey of equal proportions cannot be compared. There is also some evidence that the endocrine secretion controls, to some extent, the functioning of the brain, and hence intelligence. Because of these facts, we would have to be either all monkeys or all humans! Therefore, considering the above arguments I do not think a myopic condition of apes can be applied to humans should the myopia be the cause of an anomaly of metabolism.

If stooping the head and neck really causes sufficient venous conjection, then why is there not choked disc, edema of the lids, absence of pupillary reflex, etc.? The ophthalmic veins empty into the cavenous sinus and if there be venous congestion sufficient to be a mechanical cause of myopia, then surely the above symptoms would result. If venous congestion is sufficient to cause myopia, there would also be a stupor, in lieu of the fact that the blood supply of the brain is scanty.

It is my belief that the methods we should pursue to determine the possible cause or causes of myopia should be arrived at by cooperating with physiologists.

May 28th, 1931.

CHARLES I. SAKS, Opt. D.

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NEW YORK CITY.

BOOK NOTICE

THE DOCTOR AND HIS INVESTMENTS, Merryle S. Rukeyser, B. Lit., M. A. Published by P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, Pa. $2.50. 1931.

Rukeyser, who is a national authority on problems of finance, has produced in this book a special treatise dealing with the savings problem of professional men. This book, to be sure, was written for the physician, but as optometrists are equally as poor investors of funds the advice given in this book will prove of equal value for them as well as for physicians. Rukeyser has answered in this book many questions for professional people on the intricate subject of the proper investments of savings and this book is one which every optometrist can read to advantage.

C. C. K.

ANNOTATIONS AND SOCIETY PROCEEDINGS

The American Journal of Optometry is the Official Organ of the American Academy of Optometry, as well as the Organ of the Arkansas, Delaware, Indiana, Iowa, Maine, Maryland, Michigan, Minnesota, Nebraska, North Dakota, Oklahoma, Pennsylvania, South Dakota, Vermont and West Virginia Optometric Associations.

The following gentlemen have consented to supply items of interest from their respective sections, acting in the capacity of

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MISLEADING PRICE ADVERTISING

In optometry as in dentistry the profession is confronted with the problem of a few practitioners who, through lack of moral fibre, are content and willing to resort to any and all unethical practices which may for the moment appear to add to their financial status. These men for the most part care nothing for ocular science. They care nothing for the precise findings of ocular refractions. They are not interested in the neurological aspect of their work. Their sole interest lies in hearing the cash-register-ring and thus do they prostitute optometry. A favorite trick of theirs is "bait" advertising. Here we find this unprincipled individual at his best. How proud he is of the fact that while he has repeatedly advertised what he terms a complete service for $6.98, that he rarely performs this service, or any other at that figure. This astute salesman frankly winks at the advertised price quoted. He does not intend to prescribe material at that price and frankly uses this bargain bait to draw to him, that small portion of the poorly informed public that might possibly go to an advertising specialist. Once the unfortunate patient comes to such a quack and a pseudo examination is started, then the sales psychology is brought into play. The examiner after making a few passes with a retinoscope, which he frequently does not know how to use, assumes a serious air and in a hushed voice informs the luckless patient that his or her case is "different," and it requires specially ground lenses of some mysterious type which fortunately he alone can supply. Of course he assures

the patient that because of this "difference," to her, and her alone, a special price will be made of $22.00.

It is sad to relate that a sufficient number of people fall for this nonsense from month to month to keep these shysters in business. However, much educational progress has already been made and it is undoubtedly true that grafters of this caliber even in times of depression are finding it necessary to resort to more and more flamboyant advertising to get by at all. It is encouraging to note that serious steps are being taken by State Boards of Optometry to curb this evil. It is also encouraging to note that department stores who have in the past permitted these grafters to trade on their good name are beginning to awaken to the evil of this situation. It is really surprising that a large mercantile establishment who would tolerate no such nonsense in any other department, would permit such grafting to go on in their optical department, thus jeopardizing the entire store's good name which it has taken years of honest effort and honest merchandising to build up. The time is fast approaching when these methods will no longer be tolerated by better business men and by better newspapers, and while the profession of optometry has long fought this evil it can best do so through the education of the public at large. It is gratifying to note that progress is being made in this direction and that every year fewer and fewer people are lured into the offices of these quacks by means of cheap bait advertising.

C. C. K.

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RULING OF OHIO ATTORNEY GENERAL

The attorney general of the state of Ohio rendered an opinion to the State Board of Optometry, stating that: "1. Corporations are not authorized to practice optometry in this state. 2. When a corporation leases space in its store to a licensed optometrist for an optometrical department and advertises in its own name that it maintains such department, such corporation is practicing optometry, regardless of whether or not the advertisements contain the statement that the department is in charge of a licensed optometrist."

He also stated "that advertising by a corporation having an optometrical department for its customers constitutes practicing optometry on the part of such corporation, regardless of whether or not the advertisement states that there is a licensed optometrist in charge of the optometrical department. The corporation is holding itself out as rendering professional services."

* * * * * *

THE PURPOSE OF THE A. A. A. O.

The American Association for the Advancement of Optometry is an organization not intended to supersede the present agencies fostering and directing optometric growth. Its purpose is to co-ordinate and enlarge upon the good work already being done, with the hope that when sufficient progress had been

made, the American Optometric Association will absorb the newer program as part of its work.

Above all, we aim to be practical and rational in the handling of this enterprise. We have no intention of ramming down any one's throat something that will be abnoxious to him. On the contrary, those who are invited to co-operate, must themselves be enthusiastic and in earnest. They must be convinced of the wisdom and propriety of this movement.

The men pioneering this movement are building on a safe foundation. They are men who will not become impatient with the quality of progress made. Neither driven by necessity nor enticed by greed, they will not force issues unwisely. They will not inject into optometry anything foolish or unreasonable. But this they maintain:

They will not stand by idly, seeing educational requirement sent sky-high, with no more privilege to serve humanity than to supply a pair of glasses. They will insist that cultural training be made practical—practical in the sense that with their improved talent shall be able to serve more than the prescribing of a pair of glasses. Dr. Kurtz is certainly right when he declares, "Optometry in 1931"—and in years to come—"shall not be practiced as in 1900."

It makes no difference what has been or may yet be, the educational advancement of optometry; how scholarly we shall be forced to become in order to practice our profession; it makes no difference even, if optometrists must acquire Ph.D. degrees in order to be licensed to practice—all this is but foolishness and imposition, if, in the last analysis, we are permitted to do no more than prescribe a pair of glasses. Yet this limitation some of our professional leaders and mentors would saddle upon us for all time to come.

It is simple mockery and hypocrisy, to talk of diagnosis by the ophthalmoscope, diagnosis by means of the campimeter or perimeter, and diagnosis by this new-fangled thing and that, when such experts, are not credited with the intelligence of being able to learn how to safely remove a foreign particle from the eye, how to extract an inturning lash that is rubbing the cornea, or administer to the simplest ocular needs of patients met in the daily routine of refraction—practices permitted and expected of the average 12 to 15 year old boy scout of today.

To turn now specifically to the question, what this new organization proposes to do, we must reply that it will depend largely upon the support and co-operation extended by the individual practitioner and the optometric school. If optometrists will urge the schools to teach them something about the eye in addition to refraction, the schools must sooner or later provide such instruction. As to whether schools will offer such training or not, your patronage will necessarily determine their policy. Even the university will recognize your proclivities and no doubt help to promote your professional and economic good. In fact the university should be quick to recognize

the importance of such training and be ready to make the first forward step. When the schools begin to qualify optometrists for this added work, it will not be long, nor so difficult a task, to have such work appropriated under our optometry laws.

The policy of The American Association for the Advancement of Optometry must necessarily be somewhat elastic for the present. In order that our efforts be effective we must exercise prudence and expediency. What we most need now is to perfect our organization. We need your moral support and advice. We shall be pleased to register your membership upon the basis of these objectives: *First, the development of a truly professional spirit among practicing optometrists; second, the limiting of the field of refraction only to those who have shown qualifications by submitting to the jurisdiction of the optometric examining boards; third, enlarging our field to embrace a practice analogous to dentistry.*

In mailing your application to the writer, Bashford Building, Prescott, Arizona, please state your age, the nature or extent of your training and practice, together with your viewpoint upon the subject. The last information will furnish a cross-section of opinions which will help crystallize a more definite policy and lead to direct action. As a registered member, you will be advised from time to time regarding developments.

S. H. ROBINSON, O. D. Chairman,
The American Association for
the Advancement of Optometry

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AN APOLOGY AND A CORRECTION

In the July issue of the American Journal of Optometry the writer in discussing the glazed goods situation accused all manufacturers of being equally guilty of either making glazed goods or else selling second and third quality lenses to those who were guilty of making this trash. In this it seems that I was mistaken as Mr. Gordon C. Baird of the Bausch & Lomb Optical Company informs the writer that his firm does not engage in these shady tactics.

We were indeed happy to be corrected in this matter and are glad to apologize for including Bausch & Lomb in with a group of manufacturers who permit themselves to become parties to the manufacture of glazed goods.

C. C. K.

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NORTH DAKOTA APPOINTMENT

Dr. H. Kornmesser of Jamestown, N. D., was reappointed to the North Dakota State Board of Optometric Examiners by Governor Shaffer. This is Dr. Kornmesser's third term on the Board which will expire in July, 1936.

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(Continued on page X)

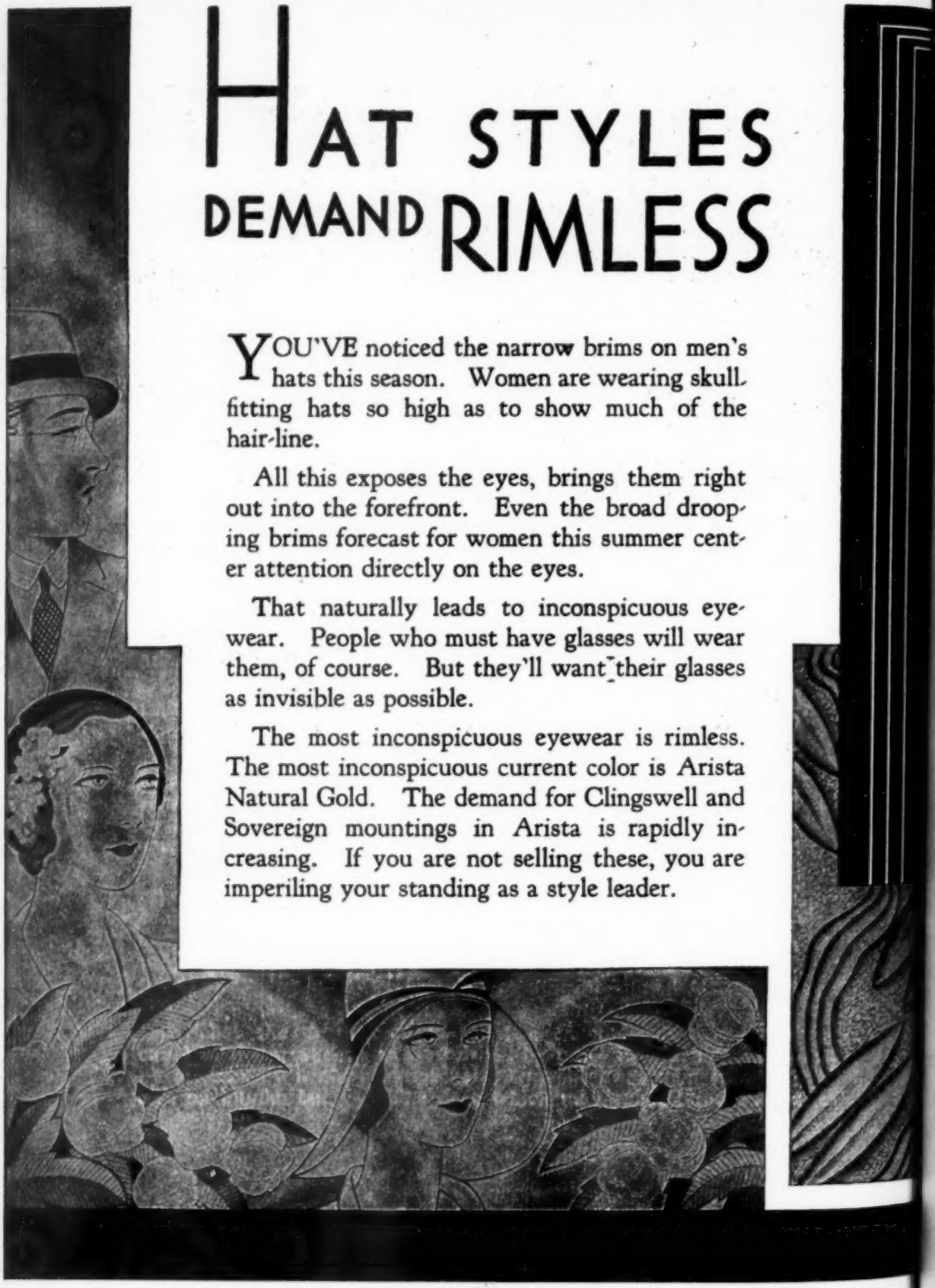
HAT STYLES DEMAND RIMLESS

YOU'VE noticed the narrow brims on men's hats this season. Women are wearing skull-fitting hats so high as to show much of the hair-line.

All this exposes the eyes, brings them right out into the forefront. Even the broad drooping brims forecast for women this summer center attention directly on the eyes.

That naturally leads to inconspicuous eyewear. People who must have glasses will wear them, of course. But they'll want their glasses as invisible as possible.

The most inconspicuous eyewear is rimless. The most inconspicuous current color is Arista Natural Gold. The demand for Clingswell and Sovereign mountings in Arista is rapidly increasing. If you are not selling these, you are imperiling your standing as a style leader.



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